

# **Azərbaycan Respublikası Prezidenti yanında Elmin İnkişafı**

## **Fondunun 2012-ci il**

### **2-ci qrant müsabiqəsinin qalibi olmuş**

#### **«Ə.Əliyev adına Azərbaycan Dövlət Həkimləri Təkmilləşdirmə İnstitutunda səs müayinə (foniatriya) laboratoriyasının qurulması»**

#### **(Qrant № EIF-2012-2(6)-39/38/3) layihəsi üzrə**

### **HESABAT**

2012-ci ildə Azərbaycan Respublikası Prezidenti Elmin İnkişafı Fondunun 2-ci qrant müsabiqəsinin qalib layihəsi olaraq və fondun maliyələşdirməsi ilə Ə.Əliyev adına Azərbaycan Dövlət Həkimləri Təkmilləşdirmə İnstitutunun Qulaq-burun-boğaz xəstəlikləri kafedrasında Dr. Ramil Həşimlinin rəhbərliyi ilə 2014-cü ildə Azərbaycanda ilk tam təchiz Foniatriya laboratoriyası qurulmuşdur. 2014-2016-cı illər ərzində laboratoriyada 1100-ə yaxın səs xəstəsi müayinə və müalicə olunmuş, aparılmış tədqiqat işi nəticələri ilə bir çox yerli və beynəlxalq elmi konqreslərdə məruzələr olunmuş, dövrü elmi ədəbiyyatda məqalələr çap olunmuşdur (Cədvəl 1). Bütün çap materiallarında işin EIF-in qrant dəstəyi üzrə aparıldığı həm mətnin içində qeyd edilmiş, həm də mümkün olan variantlarda ayrıca mətnin sonunda istinad edilmişdir (konqres materiallarında söz ehtiyatı az verildiyi üçün bəzən ayrıca qeyd etmək mümkün olmasa da, bütün materialların içində "Tədqiqatlar Azərbaycan Respublikası Prezidenti Elmin İnkişafı Fondunun dəstəyi ilə qurulmuş Foniatriya laboratoriyasında aparılmışdır" cümləsi mütləq şəkildə qeyd olunmuşdur). 2017-ci il 17-19 fevral tarixləri arasında Hindistan Dehlidə keçiriləcək «Dünya səs konqresində» də iki təqdimat planlaşdırılır ki, hər iki təqdimatın xülasəsində də yuxarıda qeyd edildiyi üzrə istinad edilmişdir.

Kafedranın 2015-ci ildə təsdiq olunmuş 5 illik elmi fəaliyyət planı laboratoriyanın imkanları üzərinə bina edilmişdir. Hal-hazırda 1 doktorantımız tərəfindən fəlsəfə doktoru elmi adı alınması üçün dissertasiya işi aparılır. Bundan başqa layihə rəhbəri aparılan iş - toplanmış elmi material nəticəsində doktorluq

dissertasiyası üzərində çalışır. Yenə layihə rəhbəri tərəfindən «Foniatriyanın əsasları» adlı dərs vəsaiti yazılmış, vəsait ilkin olaraq Ə.Əliyev adına ADHTİ elmi şurasında təsdiq olunmuşdur; 2017-ci ildə çapa verilməsi nəzərdə tutulur. Bu dərs vəsaitində də səs xəstəliklərinin müayinəsinə ayrılmış böyük bir bölmədə layihə üzrə qurulmuş laboratoriyaya istinad edilmiş, illustrasiyalar kitaba daxil edilmişdir.

Layihə üzrə qurulmuş laboratoriyanın imkanlarından kafedranın pedaqoji fəaliyyətində aktiv istifadə olunur. Belə ki, həm həkim-dinləyicilər, həm də rezidentura təhsili alan həkimlərin təhsili müddətində qırtlağın müayinə və müalicəsi üzrə bütün mövzuların təlimi laboratoriyada interaktiv olaraq aparılır ki, bu da pedaqoji fəaliyyətə öz müsbət təsirini göstərir. 2014/15 və 2015/2016 və 2016/2017-ci tədris illərində Foniatriya, Səs terapiyası, Qırtlağın mikrocərrahiyyəsi mövzulu təkmilləşdirmə kursları keçirilmişdir. Laboratoriyanın imkanları qonşu ölkələrə də yayılmış, 1 nəfər Gürcüstan vətəndaşı həkim-dinləyici olaraq 2015-ci ilin noyabr ayı ərzində laboratoriyada «Foniatriya» kursu keçmişdir.

07.06.2014 tarixində Bakıda keçirilən Yaxın Avrasiya Afrika Qulaq-Burun-Boğaz cəmiyyətinin 1-ci Beynəlxalq Konqresində «Larinqostroboskopiya kursu» təşkil olunmuş və 40 nəfər iştirakçıya interaktiv olaraq səs teli, səs müayinəsi izah edilmişdir. 2015-ci il 16 aprelində Dünya Səs Günü münasibətilə Rezidentura təhsili tələbələri üçün «Larinqostroboskopiya və səs terapiyası» mövzulu interaktiv mühazirə oxunmuşdur.

Kafedramızın həkim-rezidentləri də aktiv olaraq elmi işə cəlb edilmiş və bir çox konqreslərdə məruzələrlə çıxış etmişlər:

1. Yaxın Avrasiya Afrika Qulaq-Burun-Boğaz cəmiyyətinin 1-ci Beynəlxalq Konqresi - 1 poster məruzəsi (müsabiqə qalibi).
2. Ə. Əliyevin doğum gününə həsr olunmuş elmi- praktiki konfrans - 1 Şifahi məruzə.
3. Azərbaycan Tibb Universiteti rezidentlərinin 3-cü konqresi - 1 Şifahi məruzə.
4. 2-ci Bakı Tibb Tələbələrinin və Gənc Həkimlərin Beynəlxalq Konqresi - 1 şifahi və 2 poster məruzəsi.

Cədvəl 1. Qrant layihəsinə istinad edilmiş məqalə və xülasələrin siyahısı.

1.	Qırtlaq ifliclərinin etiologiyası və epidemiologiyası	“Əziz Məmmədkərim oğlu Əliyevin doğum gününə həsr olunmuş elmi-praktiki konfransın məcmuəsi.”- Bakı-2014.S244-248
2.	The role of voice laboratory in the treatment of laryngeal disorders	“10 <sup>th</sup> Congress of the European Laryngological Society” abstracts/- Antalya-2014.-PP24.
3.	Vocal cord varices in singers and its treatment	“XXVII Congress of the Union of the European Phoniaticians PHONIATRICES – AN INTERDISCIPLINARY SPECIALTY” abstracts/-Moscow-2014.-P29
4.	Rainke ödeminin laringostroboskopik müayene verilerine göre sınıflandırılması	“36.Türk Ulusal Kulak Burun Boğaz ve Baş Boyun Cerrahisi Kongresi” materialları. –Antalya, 2014 – PS400
5.	Benign vocal cord lesions in Azerbaijan mugham singers and their treatment	The Voice Foundation 44 <sup>th</sup> Symposium, IAP 12 <sup>th</sup> Symposium CARE OF THE PROFESSIONAL VOICE” abstracts/- 26-31 May 2015, abstractsPhiladelphia PA US
6.	Septoplasti ameliyatının sesin akustik parametrelərinə etkisi	“37.Türk Ulusal Kulak Burun Boğaz ve Baş Boyun Cerrahisi Kongresi” materialları. –Antalya, 2015 – PS1074
7.	Laryngomalacia in infants	«2 International Medical Congress for students and young doctors» abstracts/- Baku-2015.-P52
8.	Qırtlaq papillomatozlarının diaqnostika və müalicəsində düz laringoskopiyanın rolu	Azərbaycan Tibb Jurnalı - çapda - 2015
9.	Невринома гортани редкой локализации	Ə.Əliyev adına Elm və Tibb jurnalı-2015.- №1.-S.158-160
10.	Larinqomalyasiya	Təfəkkür universiteti jurnalı, çapda

# The role of voice laboratory in the treatment of laryngeal disorders

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**INTRODUCTION – OBJECTIVE:** The goal of this study is to give information about the level of laryngological service in Republic of Azerbaijan and assess the role of the voice laboratory in treatment of laryngeal disorders.

**METHODS:** In 2012, Science Development Foundation under the President of the Republic of Azerbaijan has financed and established Voice Laboratory (grant competition 2(6) at the department of Otorhinolaryngology of the Azerbaijan State Advanced Training Institute for Doctors named after A. Aliev. The laboratory is specially equipped with Endovideostroboscope Voice Analysis System (Xion Medical Products, GmbH), in order to better evaluate patients, increase diagnostic accuracy and significantly improve the quality of care.

First time in our country we started to use following diagnostic methods using features of voice laboratory which has increased our work's effectiveness:

Videolaryngostroboscopy hasn't been actively used neither in our clinic nor in the other clinics. In addition to vocal cord visualization, it analyzes morphological structure and vibratory features of epithelial and sub-epithelial layers of vocal cords under an intermittent light. This method determines various parameters of a voice signal as well as its frequency, power and reverberations.

Voice analysis system – is a method which determines acoustic and aerodynamic features of voice, it's basic frequencies, change in it's frequencies, strength of voice, changes in amplitude and percentage of harmonic reverberations and such spectral parameters as voice turbulence index.

Flexible naso-pharyngoscope is a tool which is used as a diagnostic method in a patients with a severe gag reflex, it's a very convenient method to visualize parynx and naso-pharynx in children and teenagers as well as in senior age patients. It is of a great benefit to the patients of all age groups and getting this apparatus was very important accomplishment within the goals of this project.

It can be said that test of strobokymography was performed for the first time in our clinic in this region. This examination helps to find out easily even the very small neoplasms on any part of vocal cords.

Using video and photo documentation programs (DIVAS) has made it easy to document the examinations which helps to evaluate any step of the examination process.

**RESULTS:** During 31 work-days 56 patients were examined which are between 4-76 year-old, at voice laboratory. 26 of the patients were women, and 30 of them were men (Table-1).

Table 1. The table of laryngological patients about their age and sex.

Age	0-10 yst	11-20 yst	21-30 yst	31-40 yst	41-50 yst	51-60 yst	61-70 yst	71-80 yst	Total
Woman	0	-	0	10	1	0	0	-	11
Man	1	1	0	0	0	7	1	0	10
Total	1	1	0	10	1	7	1	0	21

19 of the patients were voice professional and also one of them was divinity worker, 5 of them were teachers, and 13 of them were singers. 13 patients were unemployed (11 of them were

housewives and 2 unemployed men), 7 of them were retired, 4 of them were children and 13 of them were about other jobs (lawyer, engineer, businessman, workman) (Table 2).

Table 2. The table of about patients' jobs.

Job	Voice professional	Unemployed	Retired	Child	Other	Total
Woman	7	11	0	0	0	18
Man	12	2	0	0	13	27
Total	19	13	0	0	13	45

Patients who has admitted to our clinic were examined by voice laboratory by using abovementioned diagnostic

methods and then they were treated for the following diagnoses (Table 3) :

Table 3. Spreading of the illness among patients.

Sex	Di.	Nodules	Cyst	Tubercle	Hemangioma	Mucous membrane dysplasia	Panda's edema	Paralysis	Papillomatosis	Carcinoma	LPR	Healthy	Total
Woman		0	3	-	-	0	-	0	1	-	0	0	4
Man		1	1	2	1	0	0	0	0	0	11	-	15
Total		1	4	2	1	0	0	0	1	0	11	0	19

Before the laboratory was established of all patients who evaluated in our clinic, 107 were diagnosed with laryngeal neoplasm (from which 86 were benign and 21 were malignant), 45 patients were found with laryngeal paralysis, 8 patients with laryngeal tuberculosis, 7 patients with congenital malformation, 6 patients with trauma, 6 patients were found with laryngeal edema and in 2 patients laryngeal mycosis has been determined.

**CONCLUSIONS:** Establishment of Voice Laboratory has significantly increased the rate of diagnostic accuracy improving the quality of patient care.

Using the previous two years in our clinic just 181 laryngological patients were examined but after the establishment of the laboratory 56 patients were examined during a month –work-days and also it shows obviously the rise of service.

This work was supported by the Science Development Foundation under the President of the Republic of Azerbaijan–Grant № EF-2012-2(6)-2038/Keywords: laryngeal disorders, voice laboratory.

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Picture1. Evolution of the laryngeal examination



A. Mirror laryngoscopy



B. Fibrolaryngoscopy



C. Videofibrolaryngoscopy



D. Videolaryngostroboscopy



E. Acoustic analysis of voice

# BENIGN VOCAL CORD LESIONS IN AZERBAIJAN MUGHAM SINGERS AND THEIR TREATMENT

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**INTRODUCTION – OBJECTIVE :** Mugham also known as Mugam (Azerbaijani: Mugham) is one of the many folk musical compositions from Azerbaijan, contrast with Tazmil, Ashugs. Mugam draws on Arabic maqam. It is a highly complex art form that weaves classical poetry and musical improvisation in specific local modes. Mugham is a modal system. Unlike Western modes, "mugham" modes are associated not only with scales but with an orally transmitted collection of melodies and melodic fragments that performers use in the course of improvisation. Mugham is a compound composition of many parts. The choice of a particular mugham and a style of performance fits a specific event. The dramatic unfolding in performance is typically associated with increasing intensity and rising pitches, and a form of poetic-musical communication between performers and initiated listeners.

A *khananda* is a name generally given to singers of mugham. Classical *khanandas* followed a specific dress code which included a *chokha*, an *arkhalig*, an *astrakhan* cap (*papag*), rings and a belt decorated with gold. *Khanandas* would traditionally gather in salons known as *majlis-i-khananda* (Fig 1).

A *khananda* who was required to have no less than a two-octave voice range would be tested on the knowledge of mugham subgenres, including their vocal performance, as well as classical poetry. If a *khananda's* specialization included playing an instrument he or she would be required to demonstrate proficiency in both solo and accompanied performance. A *khananda* who successfully passed the exam gained the title of *ustad* (=master).

In 2003, UNESCO recognized mugam as a Masterpiece of Oral and Intangible Cultural Heritage of Humanity.

The goal of this study to assess the prevalence of benign vocal cord lesions and their treatment in the Azerbaijan mugham singers.

**METHODS :** 94 professional mugham singers were examined and treated in our clinic from 2009 to 2014 year. There were 22 women and 72 men with their ages ranged from 18 to 61 years. 58 persons were students of the conservatory and music colleges and 36 persons were professional singers and teachers of this educational institutions. All the patients were examined by laryngostroboscopy and acoustic analysis, in voice laboratory which was financed and established by Science Development Foundation under the President of the Republic of Azerbaijan (Fig 2). In 34 examined patients (21 man and 13 woman) was diagnosed benign vocal cord lesions. In 8 patients (2 man, 6 woman) was diagnosed bilateral vocal cord nodules, in 4 patients (3 man and 1 woman) Reinke's edema, in two mans vocal cord polyps, in 9 patients vocal cord cysts (in three singers (1 man and 2 woman) in right vocal cord and in 6 mans in left vocal cord), in 7 patients varicosis (5 man and 2 woman), and in four mans sulcus vocalis. In all patients lesions appeared by the using of the sound wrongly (Table 1).

**RESULTS :** In all patients Vocal cord nodules were bilateral and fairly symmetric. Their stroboscopic pattern showed normal or minimal reduction of the mucosal wave activity during stroboscopy. And in all singers (except one woman with cystic bilateral nodules) these lesions disappeared in response to behavioral modification of voice use (voice therapy and voice rest).

In our hospital, the specific classification is used for the treatment of Reinke's edema, which has been applied in examined singers too. In all of them this disease was in the initial stage. And all patients were treated with voice therapy procedures.

Two patients with the vocal cord polyps, one woman with cystic nodules and 8 patients with vocal cord cysts were treated by phonomicrosurgery.

In 5 cases varicosis was found on the left vocal cord, in 1 case on the right vocal cord and in 1 case in both vocal cords. In four patients varicosis were on the superior surface and in the middle musculomembranous region of the vocal cord and one of them was on the medial surface of the vocal cord. All the patients presented hoarseness and poor performance during the singing. Surgical treatment of 5 patients was performed with carbon dioxide laser cauterization (LEICA-4-40; Smartxider C60 Laser, 500 mW CM). Indications for surgical intervention in patients were enlargement of the lesion, recurrent hemorrhage, development of a mass in conjunction with the varicosis and unacceptable dysphonia.

All patients have resumed full vocal activities, and during the next nine months after operation nobody had a subsequent hemorrhage or vocal deterioration. It was significant improvement of the acoustic analysis (jitter, shimmer and harmonics/noise ratio) and laryngostroboscopy values after treatment.

**CONCLUSIONS:** Benign vocal cord lesions in mugham singers appeared by the using of the voice wrongly. These lesions were found on 34 (36,2%) of the 94 examined singers. It seems more in men than women. All the patients presented hoarseness and poor performance during the singing. The surgical procedure performed in 16 patients, and 18 were treated by the conservative and voice therapy procedures. Treatment methods in all cases were effective.

This work was supported by the Science Development Foundation under the President of the Republic of Azerbaijan—Grant N- EBF-2012-2(6)-39/38/3

Keywords: mugham, *khananda*, vocal cord, benign lesion, voice therapy, phonomicrosurgery.

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Fig 1. Mugham Trio

DS	Man	Woman	Total
Nodules	2	6	8
Reinke odema	3	1	4
Polyps	2	-	2
Cysts	7	2	9
Varicosis	5	2	7
Sulcus vocalis	4	-	4
Total	34	11	34

Table 1. Benign vocal cord lesions in mugham singers



Fig 2. Examination in the Voice Laboratory

Qrant layihəsi üzrə qurulmuş laboratoriyada həm elmi-pedaqoji, həm də klinik iş davam etdirilir. 2017-ci il ərzində də laboratoriyanın imkanlarından istifadə edərək ciddi elmi araşdırmalar aparılması planlaşdırılır. Layihə rəhbəri kimi qısaca yazılmış bu hesabat üzrə tələb olarsa daha geniş təqdimat etməyə hazırım.

Layihə rəhbəri



T.e.ü.f.d. Həşimli Ramil

13 yanvar 2017-ci il.